

UTAH DIVISION OF WILDLIFE RESOURCES • WINTER 2003-2004

# wildlife

R E V I E W

## HABITAT

A SPECIAL ISSUE





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Cover photo: Near Red Fleet Reservoir, Ron  
Stewart

Photo at right: Sagebrush die-off in  
northeastern Utah, Rory Reynolds

## Wildlife Review

Utah Division of Wildlife Resources  
Winter 2003–2004

# Habitat ISSUE

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"As director, I have made it the highest priority of my administration to create the Habitat Initiative, which will focus on aggressive habitat restoration efforts throughout the state."

## DIRECTOR'S MESSAGE



**KEVIN CONWAY,**  
DIRECTOR,  
UTAH DIVISION OF WILDLIFE RESOURCES

**T**HANK YOU for picking up this issue of *Wildlife Review*. It's the annual habitat issue, which chronicles the important work that we have done in habitat acquisition and development over the past year.

It has been a challenging and difficult year, as we descend deeper into the grips of one of the worst droughts Utah and the intermountain west has ever experienced. For the first time in recorded history, we are seeing sagebrush die-offs over vast areas of eastern and southern Utah.

As director, I have made it the highest priority of my administration to create the Habitat Initia-

tive, which will focus on aggressive habitat restoration efforts throughout the state. I've appointed Rory Reynolds to develop and oversee this critically important wildlife habitat restoration effort. You'll read more about the initiative in Rory's article.

In order for the Habitat Initiative to be successful, many partners will have to pool their talent and resources—from federal and state land management agencies to local community and county governments. One thing is certain—if we are not successful in restoring these devastated rangelands, mule deer, sage grouse and myriad other wildlife species will continue to decline toward dangerously low levels. Left unchecked, continuing rangeland declines and soil erosion will also severely impact critically important watersheds and water quality statewide. These declines will also impact rural economies, recreational opportunities and ecosystem health in general.

If any of these species are ultimately placed on the federal threatened and endangered species list, local economies may be severely impacted and opportunities for responsible growth and development throughout the state will be drastically curtailed. Nevertheless, I am confident that, with appropriate financial and human resources, we can turn around this alarming trend in our state.

Also, Utah teachers should enjoy a new addition to the *Wildlife Review*—Project Wild information to help teach curriculum requirements. f

*Kevin K. Conway*

BY SCOTT ROOT,  
CENTRAL REGION CONSERVATION OUTREACH MANAGER

## WINTER & SUMMER

# Ranges

*Utah's wildlife depend on rangelands*

### What are rangelands?

Simply defined, rangeland is land consisting of natural grassland, shrubland, desert or forest (basically, any land that is not barren desert soil, rock, farmed, or covered in concrete).

Wildlife depend on rangeland to provide the habitat necessary to survive. Big game animals and many other wildlife species, as well as livestock, are directly impacted by range conditions throughout Utah.

Most of a big game animal's diet consists of rangeland grasses, forbs, and browse. Grasses are commonly recognizable and understood by most people. However, many people are not familiar with the terms "forbs" and "browse."

Forbs are broad-leafed, herbaceous plants. Browse can be defined as the leaf or twig growth of shrubs, woody vines or trees. Examples of forbs commonly eaten by animals include dandelion, mountain bluebell,

sawtooth butterweed, kochia, tailcup lupine, clover, broadleaf filaree, globe-mallow and numerous other types of broad-leafed vegetation. Examples of commonly eaten shrubs and browse include mahogany sagebrush, bitter

brush, serviceberry, cliff rose, oak brush and rabbit brush.

### Summer range

Summer ranges are fairly abundant in Utah and generally provide ample food for the state's big game animals during the summer months. Picture a deer, elk or moose quietly feeding in a meadow full of lush green vegetation, with the shade of aspen trees or pines surrounding the meadow. That's ideal summer range. For these animals, it's like standing in the middle of an enormous salad situated in a high-elevation mountain setting.

During normal precipitation years, this scene is common and it's hard to imagine problems affecting summer ranges. There are numerous factors, however, that negatively impact them. Air quality, soil conditions and erosion, recreational use by man, urban sprawl, fire, drought, and many other factors influence the success and value of summer ranges.

To find the best forage, many of Utah's wildlife species migrate to optimal range areas throughout the seasons. Big game migration to succulent range areas can be difficult throughout much of the state. Urban sprawl,



JIM KARPOWITZ

The Henry Mountains, in the background, highlight this rangeland view.

vehicle collisions, predation, and other factors interfere with migration. Though some of Utah's big game animals may not migrate much at all, others travel more than 75 miles on an annual basis just to reach an area that has the proper habitat.

Spring provides a good example of wildlife migration to the best forage. This is the season that "green up" occurs along the lower elevations. Motorists often see herds of deer and elk feeding on succulent grasses that are adjacent to many of Utah's highways. As the snows melt and the green vegetation moves up the mountain, the deer follow this welcome green foliage toward the higher elevations of the summer range.

Precipitation is the most important factor in determining the vegetative type and productivity on any rangeland. Most rangelands throughout the West do not receive great amounts of

precipitation. With several years of drought affecting much of Utah, some of the state's summer ranges are not as productive as healthy wildlife populations need. This is especially true of summer ranges west of I-15.

Lack of shade and intense heat from the summer sun can hurt a vulnerable range area. Precipitation can make or break range management efforts, especially after fire has left an area barren. And fire has taken a toll on some of the state's critical ranges.

In 2002, for example, fires burned more than 265,000 acres in Utah. The Division of Wildlife Resources and other agencies provided seed to plant on lands affected by many of these fires. Because much of the state is considered "semi-desert" range, the land often lacks enough native grasses and forbs to reestablish a native plant community after a fire strikes. Reseeding is essential in these

areas or weedy non-native species such as cheatgrass will quickly take over. It's difficult to establish seeds in a large-scale effort, however, when drought is gripping the state.

The DWR takes range management very seriously and realizes that healthy rangeland means healthy wildlife populations. Thousands of hours are spent each year by DWR habitat biologists, range crew employees and many other employees in planning and implementing innovative and successful habitat management techniques to ensure optimal range conditions for Utah's wildlife.

### Winter range

Winter range is typically found in lower-elevation areas that have less snow and sufficient vegetation during the harsh winter months.

With healthy winter range and habitat conditions, big game popula-



SCOTT ROOD

Elk, just like deer, depend upon an abundance of nutritious browse to survive the lean winter months.



tions can grow quickly. For example, in 1918 there were an estimated 20,000 mule deer on the Kaibab Plateau in Arizona; in six years that population grew to approximately 100,000. When range conditions worsened and browse was severely diminished, deer died by the thousands. Eventually, the deer population was left at about 5,000 animals.

In the first days of Utah's settlement, there were only about 1,000 deer in the state. By 1916, the population had grown slightly to 8,500 deer but by 1960, Utah's deer herd was estimated at about 500,000. Today, the state's deer population is about 280,000 strong.

Among the challenges facing winter ranges that are so critical to mule deer is the loss of open space in some areas of the state. Large numbers of people have left the crowded cities of the Atlantic and Pacific coastal areas for the open spaces of Utah and other Western states. On average, the population of these states has increased by more than 25 percent during the last 10 years or so. Thousands of acres of rangeland are rapidly being converted into ranchettes, housing projects and industrial parks. In the entire United States, as much as 1.5 million acres of rangeland per year may be lost to urbanization. These are very sobering statistics that have a direct impact on our wildlife populations.

Much of the traditional winter range along the Wasatch Front is considered ideal for building a home. The lower elevations along the foothills, which allow someone that coveted "view of the world" home, are often situated right in the heart of critical winter range. Though some big game animals will spend the winter among patches of mountain mahogany along high mountain ridges, they generally don't fare very well at higher mountain elevations because the vegetation is usually covered by several feet of snow. South-facing slopes of Utah's mountains are the first to have the sun melt off the snow and expose vegetation. Though deer usually concentrate along these south-facing



**A healthy variety of rangeland and forest habitat is necessary for wildlife.**

slopes during winter, historically big game came right down to the valley floor to feed on sagebrush. Many of Utah's big game animals have been pushed up the mountain to the foothills during winter. Because of continued development, they're now struggling to find food.

Some parts of Utah provide not only a warmer climate, but also vast, healthy areas of winter range for deer. A winter range with these conditions generally contributes to the creation of healthy, robust big game animals. When winter range conditions are healthy, wildlife populations usually reflect these conditions.


The DWR has purchased many critical winter range areas during the past 50 years. The division limits motorized traffic on these wildlife management areas during winter to protect animals at this vulnerable time. Stress during winter is a major factor in big game mortality. If a big game animal hasn't foraged on nutrient-rich vegetation, it has a hard time surviving in

cold and deep snow conditions, especially when chased by predators and people.

Depending on the vegetation makeup desired by range scientists, encroachment of pinyon and juniper trees, weeds, and other vegetation types can also negatively impact winter rangelands. About one-third of the state is covered with pinyon and juniper. Both trees tend to crowd out desirable browse plants for mule deer. In some cases where these trees have been removed, as much as 30 times more deer browse and other food is produced than previously grew in the area.

Big game animals are not only monitored by Utahns because they are a big part of our hunting tradition, but because they are a great indicator as to the success of Utah's winter range areas. Utah's summer and winter ranges are truly the key to ensuring a bright future, not just for big game animals, but for many of the state's wildlife. f



A photograph of a mule deer with large, multi-tined antlers standing in a snowy, brushy landscape. The deer is facing right, and its body is covered in brown fur with a white patch on its hindquarters. The background is filled with dense, snow-covered shrubs and trees.

Sagebrush is critical to deer and elk as their main winter food source. Sagebrush also breaks up the blanket of snow, providing access to grasses and other plants beneath the snow.



BY RON STEWART,  
NORTHEASTERN REGION CONSERVATION OUTREACH MANAGER

## WILDLIFE &

# Sagebrush

*Synonymous with the American West*

**S**AGEBRUSH. To some it's beautiful, an endless sea with rolling gray waves. Many believe it's the symbol of the American West. Another group feels sagebrush is an obstacle to be overcome or exterminate. For others, it's simply "home."

It's also home to roughly 170 North American birds and mammals.

Wildlife that live in the sage year-round, or depend on sagebrush during critical periods such as their breeding season, are called "sagebrush obligates." Their survival depends on the plant. The best known obligates are the Greater Sage-grouse and pronghorn, but there are numerous others too, including the Sage Sparrow, Sage Thrasher, pygmy rabbit and sagebrush lizard.

Another group of wildlife are considered near-obligates. They rely on sagebrush during critical times of the year but also use other habitats. In the winter, elk and mule deer are often considered near-obligates.

Animals also use sage seasonally or opportunistically, or utilize other habitats within the sagebrush communities. Still more prey on the animals and insects living on or in the sagebrush-steppe communities.

Sagebrush provides a critical food source, especially during winter when its digestible, evergreen foliage main-

tains higher protein levels than other shrubs and grasses. Many animals feed almost exclusively on its leaves.

In studies, the crude protein level of sagebrush (12.4 percent) is three times the protein levels found in winter grasses (3.7 percent) and slightly above another preferred shrub, curl-leaf mountain mahogany (10.6 percent). Sagebrush leaves are also relatively easy to digest. Researchers have found sagebrush and curl-leaf mountain mahogany are among a very short list of plants that meet or exceed the winter protein levels mule deer need to survive.

It's not surprising then that sagebrush provides most of the winter forage for mule deer and elk, and almost all the forage for sage-grouse, pygmy rabbits and other obligate species.

During the winter, the crowns of sagebrush break up the blanket of hard packed snow. The crowns provide animals a source of food and an access point to the grasses and other vegetation beneath. Taller stands of sage provide places to escape the worst of winter's winds and freezing temperatures. When the snow falls, open spaces often remain under the canopy of sage, creating natural igloos that provide smaller animals with both warmth and security.

During the warmer months, sage provides food and nesting cover for



Large tracts of dying and dead sage are scattered throughout Utah.



many birds, mammals, reptiles, and other wildlife. Brewers and Sage sparrows build their nests in the canopy of the sagebrush and feed on insects and seeds found on the ground.

Perhaps the most musical of the obligates is the long, slender, gray-brown Sage Thrasher. During the breeding season, the male's sweet, warbling song can be heard from the tops of tall sage. It usually builds its nest in the protective branches of the sage, but sometimes it will build a ground nest under it. Sage Thrashers feed on larger insects, especially grasshoppers, Mormon crickets, weevils, wasps, and bees. It adds fruits and berries to its diet later in the season.

Sage-grouse prefer a smaller, medium-sized sagebrush under which they hollow out a small depression that they sparsely line with grasses and sagebrush leaves before laying seven to eight spotted eggs.

Pygmy rabbits dig a hole under the sagebrush to have their young, and pronghorn seek out the protective cover of sage to have their fawns.

"Sagebrush" is one of only nine "biomes" used to describe the ecological distribution of birds and other wildlife north of Mexico in North America. At first glance, a sagebrush steppe looks like an endless gray mass, but it's really a diverse mixture of habitats. Hidden inside this complex system are wetlands, woodlands, grasslands, other shrublands, and even herb and forb gardens. The mix of plant communities attracts a large diversity of wildlife.

Even obligate species, like the Greater Sage-grouse, need this mosaic. Sagebrush leaves are an important food item, but their young won't survive without the extra protein and nutrients provided by green forbs and insects.

Historic references and recent studies indicate most of the sagebrush stands, prior to settlement, would have been less dense with sage and interspaced more with bunch grasses (native grasses), forbs, and other plants. Today, overall acreage is declining and the compositions of most of

the remaining sagebrush communities have been changed.

The compositional changes can be due to a natural cause, such as drought, but most are human caused. Heavy grazing, fire suppression, and other land practices often reduced or eliminated native grasses and forbs, allowing the sagebrush a competitive advantage. This advantage allowed sagebrush plant densities to increase, and the stands lost many of their values to both wildlife and livestock.

Strangely, sagebrush communities face another threat—elimination. Again, human land use practices play a major role as sagebrush is systematically eliminated for towns or agricultural purposes. An even greater threat today is the human introduction of exotic plant species. Cheatgrass and other exotics are changing the rules of survival. For example, cheatgrass likes fire. Cheatgrass dominated areas burn easily and frequently, giving it the competitive advantage over sagebrush, which



© RON STEWART



takes much longer to mature.

Highly simplified, these two factors mean the sagebrush communities are losing their diversity. Key habitat components for wildlife survival are being reduced or eliminated. As habitat quality declines, so do population numbers and, in some cases, the entire species dies out.

In the Intermountain West, more than 50 percent of the shrubland and grassland bird species are declining. The Greater Sage-grouse, an indicator species for healthy sage communities, is a good example.

Studies document Greater Sage-grouse surviving in areas with a sagebrush canopy covering 20 to 50 percent of the land. They prefer to nest in habitats with a 20 to 30 percent canopy of big sage, and their winter preference is a canopy that's around 28 percent. The Greater Sage-grouse has been extirpated (locally extinct) on 59 percent of its historic range in Utah. The Gunnison Sage-grouse has been reduced on 73 percent of its range. These figures

correlate with the loss of healthy sagebrush-steppe communities.

Mule deer rely on sagebrush for forage during the critical winter months. When winter ranges are impacted, causing sagebrush loss, deer populations decline.

Pygmy rabbits face even more severe population declines. Once widely spread across eight western states, they are now reduced to a few, isolated patches.

Compositional changes have also had an effect on non-obligated animals.

White-tailed prairie dogs don't rely on sagebrush for protection or food sources; they inhabit the grasslands within the sage-steppe communities. They were petitioned to be listed under the Endangered Species Act in 2002 for declines related to habitat, disease and human impacts.

The range of the Ferruginous hawk is quite extensive—the drier country of the Great Plains and Great Basin from Canada to Mexico, eastern Washington to Oklahoma. While the

range is extensive, this hawk has seriously declined in numbers. Its last stronghold is in the sagebrush. Ground squirrels, rabbits, and prairie dogs are among its preferred prey, while tall sagebrush and pinyon/juniper trees provide places to nest.

Other predators survive here as well. The coyote is almost synonymous with sagebrush and the American West. Burrowing Owls often nest inside the prairie dog burrows and feed on the mice and insects that frequent the sage and grassy openings. In their search for grasshoppers, caterpillars and other large insects, Long-billed Curlews frequent the uplands covered with small, low-growing sage and grasses.

The sagebrush-steppe is a mosaic of young and old stands of sage mixed with under layers of forbs and grasses, openings of native grasslands, springs with riparian vegetation, wet meadows, small woodlands, and broadleaf shrub thickets. Restoring this community diversity is the key to keeping wildlife in the sagebrush-steppe. f





BY BRENT STETTLER,  
SOUTHEASTERN REGION CONSERVATION OUTREACH MANAGER

## MANAGING & PROTECTING

# Forests

### *Smokey Bear had it mostly right*

**O**LD TIMERS, like myself, will remember the Smokey Bear TV commercials, showing a black and white cartoon forest with nothing but burnt trees and charred ground. Smokey poses, holding a fire fighter's shovel, and solemnly declares: "Only you can prevent forest fires!"

Those commercials influenced generations of Americans.

More than ever, healthy forests require management and protection, although the strategies for achieving that goal have gradually changed. With respect to fire, forest managers now acknowledge the benefits of fire in the removal of deadfall, diseased trees, and in the recycling of nutrients and rejuvenation of vegetation. Although fires caused by human carelessness are still condemned, allowance is made for natural fire and "prescribed burning."

Aside from fire, management of a forest includes many elements. Soil, water, air, plant and wildlife all demand careful oversight. It's a tough

job, made more complicated by competing interests. Industry, real estate, mining, logging, grazing, wildlife management, endangered species protection, water storage, and outdoor recreation must all be juggled.

In such a situation, no special interest is ever completely satisfied. Each party complains that its respec-

tive concerns are being compromised or trampled by another. Add attorneys, law suits and politics to the mix, and you have a real Wild West show.

Lots of wildlife live on national and state forests, which provide essential habitat. Habitat management is a key ingredient in wildlife management. Controversy is a common artifact here because, in most cases, the agency responsible for

managing wildlife is different from the agency responsible for administering the land. Different missions and visions generate tension in decision-making. Issues are further muddled by input from the varying constituencies. People management is usually the most challenging part of forest and wildlife management.

Add Mother Nature to the picture. She is often undependable and uncooperative. The best efforts of human managers can be thrashed by her whims. She can deliver lightning, flash floods, soil erosion, and devastating drought. No amount of money thrown at habitat enhancement can compensate for her extremes. Weather will probably always be the wild card in the management game.

With all the potential for failure, it's amazing that we have as much forest and wildlife as we do. In our free society, diversity causes conflict but also produces superior results. When mistakes and misjudgments are made, alternative voices speak out, and problems are corrected. It's an ongoing saga.

Regardless of who we are or what we do, as Americans we are privileged to contribute to the planning and management of our forests. Our personal involvement is essential. If we collectively accept stewardship for forest health, that's what will happen.

## Healthy forests require management and protection.

Smokey Bear's message, "Only you can prevent forest fires!" applies today. The message may be broadened, however, to express: "Only you can prevent forest destruction!"

As forest users, planners and administrators, we must assume responsibility for our actions and the effect those actions have on the larger picture of forest health. Healthy forests are up to each and every one of us! f





Americans are privileged to contribute to the planning and management of forest health – in fact, it is essential that they participate.







BY PHIL DOUGLASS,  
NORTHERN REGION CONSERVATION OUTREACH MANAGER

## UTAH'S

# Wetlands

*They're more common than you think*

**W**HERE ARE WETLANDS?  
Wetlands are part of Utah's landscape. They're found from the sides of streams in wilderness areas to the salty shores of the Great Salt Lake. They range in size from a small pond in the corner of a schoolyard to the Great Salt Lake itself.

Wetlands are not always easily recognized. Looking down from the mountain tops of the Wasatch Front, one might see massive expanses of mudflat and surmise that the barren muck is of no consequence—that they may even be an eyesore, an embarrassment, a project for beautification. In fact, these huge mudflats are an important part of the wetland ecosystem of the Great Salt Lake.

Wetlands, even mudflats, provide critical wildlife habitats, including foraging areas for shorebirds and loafing space for waterfowl. In addition to providing a huge food source of seeds for waterbirds, some emergent wetland vegetation also benefits the environment by controlling floods and filtering pollutants. Once people understand the role these areas play, wetlands take on their own sense of

beauty and become areas that society values.

When people think of wetlands, most think of cattails, ducks and ponds. But there are many types of wetlands, each with its own special characteristic. These different wetlands also benefit a great array of wildlife, from Columbia spotted frogs to American Bald Eagles.

To further explore wetlands, go to the Conservation database Web site listed with some of the classes of wetlands discussed below:

### Riverine

High on the lava boulder fields of the Boulder Mountains, at the headwaters of a tiny stream, is a wetland that holds a special prize in the wildlife world. Just a few years ago, biologists discovered this stream has its beginnings in a sedge-ringed wetland containing a remnant population of Colorado River cutthroat trout ([www.dwrcdc.nr.utah.gov](http://www.dwrcdc.nr.utah.gov)).

Many of Utah's rivers and streams have flood zones that support seasonally flooded wetland areas. A key definition of wetlands is "the presence of water that is on the land long enough to support wetland vegetation and

hydric soils." It's important to note that wetlands do not always have water on them but when they're flooded, the flood period is long enough to allow the soils to become water laden. The only types of plants that can grow in these conditions are tolerant to both flood and drought.

### Depression/basin (palustrine)

These are often the classic cattail ponds that most people think of when they think of wetlands.

While these areas look healthy, they most often are following a path of succession that will ultimately change them from wetlands to uplands. This happens as cattails catch and trap sediments that displace water and eventually support non-wetland plants.

Professional wildlife managers have learned that to maintain critical habitat and food sources for wildlife, it's necessary to "reset" the biological clock at wetlands to prevent this full succession from happening. This is accomplished by controlling water through alternately flooding and drying out these management areas. This mimics "drown and drought" natural conditions and helps ensure the areas always provide food, water, shelter, and space, arranged in the most productive way.

### Lacustrine

These wetlands are characterized by water two to four feet deep that supports vegetation adapted to these deeper water areas. Hardstem bulrush is the predominant wetland plant in these wetlands. These areas, often referred to as littoral zones, are very important to some fisheries. Pelican Lake in the Uinta Basin is a good example of a hardstem-lined lake with a healthy littoral zone that is critical to the lake's bass and bluegill fishery ([www.dwrcdc.nr.utah.gov](http://www.dwrcdc.nr.utah.gov)).

### Estuarine

Estuary wetlands are most commonly referred to in association with fresh water meeting ocean water. In recent years, many wetland scientists have also referred to salt marshes that



are not connected to oceans as estuary wetlands.

The flood and drought conditions described in the riverine class of wetlands also occur in salt marshes. The main difference is these salty marshes are poorly drained areas that maintain minerals. During spring and fall wet seasons, the areas are flushed with fresh water. As they evaporate, the minerals are trapped and accumulate. The plants that have adapted to these circumstances are very salt tolerant plants called halophytes. The most common halophyte in Utah is *Salicornia* spp, also called pickle weed. It's a valuable food source for Canada geese and ducks, such as the mallard ([www.dwrcdc.nr.utah.gov](http://www.dwrcdc.nr.utah.gov)).

#### **Wetlands are important to wildlife**

The dots and lines on the "critical wildlife habitat" map do not give full justice to how wildlife depends on wetlands and the management activities that keep these areas healthy. Wildlife biologist John Luft once related an experience that enforced to him the true meaning of the term "critical wildlife habitat."

Luft's first assignment with the Division of Wildlife Resources was assistant area supervisor at the Ogden Bay Waterfowl Management Area. As such, he enjoyed watching thousands of graceful tundra swans (see [www.dwrcdc.nr.utah.gov](http://www.dwrcdc.nr.utah.gov)) migrate to

Ogden Bay.

Late one winter, he noted that swans had gathered to an unfrozen, small open water area to feed on the tender and nutritious tubers of sego pondweed. It was the only unfrozen pond in the area and the only food source. Luft became concerned when he noticed that many of the young birds appeared weak and unable to fly. On further examination, he discovered that the birds had depleted the feed in the area. He also noted that carp were thick in the turbid pool. He determined that the carp had inhibited the growth of the pondweed.

The following year, carp were removed from the pond and the pondweed flourished again. As a young biologist, the experience quickly emphasized to him the importance of quality habitat, in sufficient abundance at critical times of the year.

At first glance, a barren mudflat seems like an area void of purpose or use. Many of these areas are pocked with tracks from all-terrain vehicle use. However, similar areas that are protected as bird sanctuaries, such as the Audubon Sanctuary, are home to the snowy plover, a small relative of the killdeer. The snowy plover nests and rears its young in these areas. These mud flat features of the Great Salt Lake attract 40,000 plovers, the second largest population in the world of this small shore bird.

#### **Show that you value wetlands**

The ultimate form of valuing wetlands is to protect them! While the "wetlands are wastelands" attitude has been reduced by laws that protect wetlands, they're still under threat of development in Utah and throughout the world. Also, while wetlands have tremendous abilities to process pollutants, they cannot process some. Especially devastating to wetlands is high concentrations of selenium.

Surveys have been conducted to learn how people feel about wetlands. A common finding is that those who have experienced marshes are the ones who consider them to be natural treasures. Waterfowl hunters have long experienced the beauties of wetlands. As a result, their dollars have purchased thousands of acres of wetlands that save a place for wildlife.

In recent years, wetlands have gained respect and recognition and are becoming a place people value. This has not happened by accident but has come through years of work. The results, to name just a few, are wetland mitigation banking efforts, The Wetland Ecosystem Education Plan, the Great Salt Lake Bird Festival, the Great Salt Lake Birding Trail Map, the Great Salt Lake Comprehensive Plan, the Farmington Bay Learning Center and the acquisition of thousands of acres of crucial wetlands. ♀



Shorebirds, like this avocet, are adapted to live in wetland areas and depend on them for their survival.



2003

Utah Division of Wildlife Resources

# HABITAT

*Annual Report*





# Habitat Annual Report

FY 2003 (July 1, 2002–June 30, 2003)

## Legislative authority

In 1995, the Utah Legislature made a long-term commitment to fish and wildlife conservation with the passage of legislation establishing a habitat conservation program for Utah. The bill established a separate account within the Division of Wildlife Resources and directed the Division to use the funds to enhance fish and wildlife habitat and

improve public access for hunting and fishing. Also, the legislation created the Habitat Council and charged it with the responsibility to provide guidance to the Division in the use of Wildlife Habitat Account funds. The council is comprised of four DWR program administrators and four citizen representatives, and it meets regularly to review project proposals. A portion of the revenue received from the sale of each license, permit, stamp and

certificate of registration is placed directly into the Wildlife Habitat Account.

## Other DWR habitat conservation funding

### Conservation permit funds

The Division has issued conservation permits to generate funds for several species since 1981. The program began with a “high bid permit” for a desert bighorn ram and has expanded over the years to include all big game species as well as cougar, bear and wild turkeys. As per administrative rule R657-41b, conservation organizations are eligible for permits that they in turn auction off at their annual meetings. Ninety percent of the revenue generated from the auctions is returned to the Division and is used to fund projects that benefit the species. These special projects have included aerial surveys, transplants, radio telemetry studies, special research and habitat conservation projects. In FY 2003, funds were used to purchase seed for numerous habitat restoration projects.

**Below, a flyfisherman tests his skill on a restored section of the Weber River near Wanship.**





## Big game enhancement funds

Hunters have the option to donate to the Big Game Enhancement Fund when they apply for a buck deer, bull elk or limited entry big game permit each year. Donations are used to pay for a variety of big game management activities, including habitat conservation projects. In FY 2003, funds were used to carry out several projects including the second phase of a DWR/BYU guzzler research project, special vegetation monitoring by Range Trend Project personnel and the second year of a vegetation mapping project on the Manti-LaSal National Forest.

## Blue Ribbon Fishery funds

With assistance from the Blue Ribbon Fishery Advisory Council (BRFAC), the Division of Wildlife Resources carries out a program to identify, enhance and protect Utah waters and their watersheds that provide Blue Ribbon quality angling experiences for the public. Funding comes from a portion of the revenue received from the sale of fishing licenses. In FY 2002 and 2003, funds were used to cover the following habitat projects:

Lake Canyon Acquisition	\$50,000.00
Lake Canyon Habitat Improvement	\$17,574.95
Little Hole Fence	\$10,282.09
Kolob Creek Fish Passage	\$ 1,905.05
Logan River Sluicing Study	\$20,000.00
River Restoration Training	\$ 4,646.00
Weber River Restoration (Morgan)	\$ 1,636.87
Weber River Restoration (Wanship)	\$32,718.74
Weber River Restoration (Peterson)	\$10,144.52
Miscellaneous Realty Services	\$ 3,400.00
Stream Flow Gages	\$80,000.00

## FY 2003 wildlife habitat account — financial report

Wildlife Habitat Account expenditures totaled \$2,049,463 in FY 2003. The percent breakdown by program was as follows: Upland Game (11%), Waterfowl (4%), Big Game (29%), Fisheries (51%) and Native Species (5%). The

total revenue for FY 2003 (\$1,881,766) plus FY 2002 carryover funds (\$500,000) yielded a FY 2003 budget of \$2,381,766. The FY 2004 budget will be the revenue projected for the year (\$1,970,000) plus \$345,000 in FY 2003 carryover funds, for a total of \$2,315,000.

## FISCAL YEAR 2003 HABITAT CONSERVATION HIGHLIGHTS

### Stream conservation projects

#### Banks Property acquisition — Piute County

The East Fork Sevier River has been identified as a focus area for the Blue Ribbon Fisheries Program in the Southern Region. The Division purchased 236 acres and 1.7 miles of river frontage from David and Frances Banks. The parcel borders a 0.7-mile BLM section of the river upstream and a 1.5-mile section downstream administered by the Utah School and Institutional Trust Land Administration (SITLA). The Banks property has some of the best fish habitat in Kingston Canyon, however, some stream restoration work is planned for the lower half

of the property. The Banks property is a key parcel to preserving fish and wildlife habitat in Kingston Canyon and for providing angler access to one of Utah's Blue Ribbon Fisheries. The project was funded with Habitat Account and Blue Ribbon Fisheries funds.

#### Weber River — Morgan & Summit Counties

Approximately .9 miles of the Weber River was restored near Peterson by sloping and revegetating the unstable banks and installing "J" hook rock barbs to deflect flows away from the banks to limit future erosion. An agreement with the private landowner allows for protection of the entire river section and 17 acres of associated riparian habitat with fencing to exclude livestock grazing. The agreement includes angler access within the fenced corridor. Near Wanship, another .9 acres of the river was restored on land owned by four different landowners. A combination of conservation easements and leases will protect the river corridor and provide access for anglers.

#### Swan Creek — Rich County

For years, the Division has operated a spawning trap on Swan Creek

#### Below, West Greens Lake pier





to collect Bonneville cutthroat trout eggs to meet the needs of the stocking program for Bear Lake. After the egg collection quota is reached, the trap is removed and the trout are allowed to migrate upstream to spawn naturally.

A stream restoration project was completed on a section of Swan Creek below Highway 89. The area has the best potential for providing spawning habitat for Bonneville cutthroat trout. The Division worked with the homeowner's association to get permission to carry out a comprehensive bank erosion control project involving the "backyards" of several homeowners.

#### **Strawberry River Phase II — Wasatch County**

This project was initiated in fiscal year 2002 and completed in 2003. The stream section just above the Division's fish trap (and next to the Forest Service Visitor Center at Strawberry Reservoir) was realigned so that it entered the trap at the appropriate angle to reduce stream bank erosion around the trap and minimize harm to the fish that are concentrated in the trap during the spawning period. Rock bars were constructed for bank stabilization and fish habitat improvements along a .25-mile section of the stream. The Uinta Nation-

al Forest, Heber Ranger District was a cooperator on the project.

#### **Little Davenport Creek — Daggett County**

Little Davenport Creek is located on the Little Hole Unit of the Diamond Mountain Wildlife Management Area. It has been identified as a North Slope Colorado River cutthroat trout reintroduction site. The project involved fencing the riparian corridor to restrict livestock grazing, and was funded with Blue Ribbon Fishery funds.

#### **Lake Canyon Acquisition and Improvements — Duchesne County**

The final payment was made on a 4,168-acre parcel in Lake Canyon that was acquired to further recovery efforts for the Colorado River cutthroat trout. The property includes a 36-acre lake and approximately four miles of stream that will be used to establish a brood population for the sensitive species and permit the stocking of this trout into formerly occupied drainages in the North Tavaputs Plateau region.

The property also provides important winter range habitat for deer and elk. The project was funded with Federal Aid to Sport Fish Restoration, Endangered Species Mitigation (DNR), Blue Ribbon Fishery and Habitat Account

funds. In addition, two miles of boundary fence was replaced and habitat improvements were carried out in the greasewood bottoms.

## **Community fishing ponds**

#### **Kaysville Ponds — Davis County**

Kaysville Ponds, located just east of I-15, has been a popular fishing location for Davis County residents for many years. At the site of the new Utah Botanical Center, Utah State University has launched a program to enhance the urban fishery and associated wildlife habitat at the ponds. This last phase of the project involved additional dredging in the lower two ponds by the Division's heavy equipment crew, construction of an access road for fish stocking trucks, and contouring the highway berm to prepare it for landscaping with trees and shrubs. All funding for this phase of the project was provided by Utah State University/Utah Botanical Center and

**These two photos dramatically demonstrate changes in Lake Canyon after the area was fenced to exclude livestock.**





the Utah Reclamation, Mitigation and Conservation Commission.

#### Clinton Park Pond — Davis County

A 4.5-acre urban fishing pond was created to capture groundwater drained from surrounding subdivisions. The pond will be the focal point for a six-acre park that will surround the pond. The Division contributed funds for pond excavation work and will assume fish stocking responsibilities to maintain an urban fishery. This was a cooperative project involving Clinton City.

### Seeding projects

The Division participates with private landowners, public land management agencies (BLM and US Forest Service), other state agencies and conservation organizations to protect and restore important wildlife habitats statewide. In many cases, this involves seeding to reestablish a diverse mix of grasses, forbs and shrubs.

The Division went a long way this past year in maintaining its capability to participate in habitat conservation by finding a new home for its seed warehouse and Great Basin Research Center personnel. A three-acre lot was purchased in Ephraim City's Industrial

### FY 2002 seed report summary

Landownership	Number of projects	Acres	Pounds	Seed value
Private Land	12	6,386	15,383	\$ 36,329.00
SITLA	4	1,194	66,398	\$105,415.00
Forest Service and BLM	10	12,855	57,124	\$137,135.00
DWR	17	810	12,126	\$ 31,041.00
<b>Totals</b>	<b>43</b>	<b>21,245</b>	<b>151,031</b>	<b>\$309,920.00</b>

### Habitat restoration highlights

Project	Ownership	County	Acres	Pounds
Mt. Dutton Burn*	USFS	Garfield	4,400	36,428
Johnson Mountain Ranch*	Private	Sevier	500	3,825
Roller Mill II	BLM & USFS	Kane	600	5,800
Sage Hen Hollow II*	BLM & USFS	Garfield	600	6,930
Huff Creek Burn*	Private	Summit	500	7,325
Dutch John Burn*	USFS, DWR, SITLA	Daggett	7,728	14,756
Book Cliffs Burn*	SITLA	Grand	6,000	60,986
Steele Ranch*	DWR	Juab	180	2,990

\*Conservation Permit Funds

Park and construction on the 17,200 sq-ft facility began in the fall of 2003. The project is scheduled for completion in April 2004. The seed warehouse is a cooperative project involving the US Forest Service, Ephraim City, DWR and the Rocky Mountain Elk Foundation.

The table summarizes the Division's seed contributions to habitat restoration projects on public and private lands in FY 2003. Regional biologists and personnel from the Division's Great Basin Research Center in Ephraim coordinated DWR involvement, including seed con-





## Water developments

### Johnson Basin water development — Utah County

Regional personnel installed three 1,800-gallon capacity guzzlers on the Timpanogos Wildlife Management Area east of Orem City. The guzzlers will provide water for deer, elk, upland game and other native wildlife species. Partnership funding was provided by the Rocky Mountain Elk Foundation.

### West Mountain chukar guzzlers — Utah County

Ten small mammal/bird guzzlers were installed on BLM land on West Mountain, west of Benjamin. Helicopters were used to transport materials to project locations to discourage off-road vehicles in the area. The guzzlers were located in areas that will benefit the local chukar population.

### Beaver Dam guzzlers — Washington County

Modifications were made to 18 guzzlers, built in the 1980s, to increase the water collection area and increase water storage. New aprons were constructed at most locations. Volunteers from the Division's Dedicated Hunter Program provided the labor for installation of the guzzler aprons and fences. The Dixie

Resource Area BLM contributed funds to modify an additional 10 guzzlers. The guzzlers provide water for the local Gambel's quail population and other small birds and mammals.

## Sportsman access projects

### West Greens Lake fishing pier — Daggett County

West Greens Lake is located on the South Red Canyon Rim of Flaming Gorge Reservoir on a spur road off SR 44. The lake is managed by Red Canyon Lodge Corporation through special use permitting by the Ashley National Forest, and is located within walking distance of two Forest Service campgrounds, the Red canyon Visitor Center and Red Canyon Lodge. Installation of the pier was a joint project involving Red Canyon Lodge Corporation, Ashley National Forest and the Division. It will provide free and fully accessible fishing opportunities for visitors to the area.

### School and Institutional Trust Land Lease — Statewide

Under an agreement reached between the SITLA Board and the Wildlife Board in 1997, DWR leases access to all school trust lands (except those

specifically closed for other surface or mineral uses) for those possessing a valid DWR-issued permit or license for hunting, trapping or fishing during established seasons. The agreement precludes the establishment of Cooperative Wildlife Management Units on school trust lands during the lease period (1997–2006).

### HABITAT COUNCIL MEMBERS

Rick Danvir – Big Game  
Maunsel B. Pearce – Wetlands/Waterfowl  
Jim Carter – Aquatics  
Jack A. Rensel – Non-consumptive/  
Native Species  
Bill James – Chair, Habitat Section Chief  
Randy Radant – Aquatics Section Chief  
Alan Clark – Wildlife Section Chief  
Paul Birdseye – Federal Aid Coordinator

### DEPARTMENT OF NATURAL RESOURCES

Robert Morgan, Executive Director

### DIVISION OF WILDLIFE RESOURCES

Kevin Conway, Director  
John Fairchild, Habitat Conservation  
Coordinator  
Nancy Fennern, Program Accountant  
Karen Jones, Office Manager



Dedicated Hunters assist with guzzler maintenance in southwestern Utah's Beaver Dam Mountains.



# FY 2002 completed projects

## Statewide

	Expenditures	Description
Habitat administration	\$ 97,963	Program administration
Habitat annual report	5,000	Publication
School Trust Land access	224,274	Annual sportsman access fee
Predator control	73,350	Upland game management
Materials acquisition/ stream restoration	23,148	Stockpiling materials for projects
Stream restoration training	6,118	Wildland hydrology courses
Seed warehouse	48,410	Land acquisition, engineering



Newly constructed urban fishing pond in Davis County.

## Northeastern Region

	Expenditures	Description
WMA maintenance projects	\$106,472	Fences, signs, roads, weed cont
Book Cliffs trail maintenance	31,761	
Browns Park WMA maintenance	12,260	WMA maintenance activities
Lake Canyon lake enhancement	11,353	Dredging for fish trap, fencing
Browns Park tractor	29,852	
Montes Creek WMA water system	12,927	Irrigation system
West Greens Lake fishing pier	24,343	Angler access
Lake Canyon acquisition	292,304	Habitat acquisition

## Central Region

	Expenditures	Description
WMA maintenance projects	\$64,175	Fences, signs, roads, weed cont.
Johnson Basin water develop.	11,700	Guzzlers
West Mountain guzzlers	3,842	Water development for wildlife
Fitzgerald WMA irrigation pipe	3,288	Irrigation system
Bonneville Cutthroat Trout- rearing facility	12,194	Hatchery facility
Mill Race sportsman access	1,555	Boat ramp & parking lot comp.
Strawberry River restoration	47,126	Stream restoration
Willow Pond fishing pier	26,869	Angler access



Important stream restoration projects were completed on various sections of the Weber River.



## Southern Region

	Expenditures	Description
WMA maintenance projects	\$83,372	Fences, signs, roads, weed control
Beaver Dam guzzler modifications	11,885	Water development for wildlife
Clear Lake, Topaz, Bicknell, Redmond and Pahvant WMAs		
Habitat technician	10,585	WMA maintenance activities
WMA maintenance projects	23,548	WMA maintenance activities
Clear Lake fence	8,055	Boundary fence construction
Bicknell Bottoms fence	10,905	Boundary fence construction
Sevier River BLM tree planting	688	Habitat restoration
E Fork Sevier R. (Black Canyon WMA)	25,280	Stream restoration
Blackrock guzzlers (completed)	3,562	Water development for wildlife
Parowan fish pond	12,270	Community fishery
Roller Mill habitat improvement (completed)	1,467	Sagebrush thinning, seeding
Stratton Pond (phase I)	28,201	Community fishery

## Northern Region

	Expenditures	Description
WMA maintenance projects	\$43,960	Fences, signs, roads, weed cont.
Little Bear River maintenance	4,856	Stream restoration proj. repairs
Ogden Bay WMA		
Upland development	4,696	WMA maintenance activities
Wetland habitat technician	3,624	
Farmington Bay WMA		
Habitat technician	6,305	WMA maintenance activities
Carp control	3,217	Rotenone treatment
Water control structures	3,400	Water level management
Public, Salt Creek, Locomotive Springs WMAs		
Habitat technician	15,810	WMA maintenance activities
Irrigation system	15,469	Upland habitat improvement
Water control structures	10,338	Water level management
Carp control	41,380	Rotenone treatment
Salt Creek development (NAWCA grant)	28,919	Habitat restoration
Swan Creek restoration	6,000	Bank stabilization
Weber River restoration		
Demar Wilde proj. maintenance	8,905	Project maintenance
Morgan City Park	1,887	Project maintenance
Wanship	69,466	Stream restoration
Peterson	47,813	Stream restoration
Henefer	37,161	Stream restoration
Lower Weber	2,000	Stream restoration
Kaysville Ponds	0	Community fishery
Clinton Park Pond	100,000	Community fishery
Ogden R. angler access improv.	1,568	WMA maintenance
Tolman right-of-way lease	10,670	Sportsman access

## Southeastern Region

	Expenditures	Description
WMA maintenance projects	\$46,812	Fences, signs, roads, weed cont.
Guzzler maintenance	2,364	Water development for wildlife
Scott Matheson wetland preserve	17,326	Tamarisk control
Desert Lake WMA		
Seasonal personnel	2,760	WMA maintenance activities
Purple loosestrife control	7,800	Weed control
Monticello Lake	55,875	Engineering for dam repairs
Ferron Reservoir	33,630	Additional engineering for dam repairs
Ferron Reservoir spillway breach	19,717	Phase I of dam maintenance
Scofield Reservoir fishing access appraisal	2,475	Land appraisal
Gigliotti Pond (phase II)	36,612	Community fishery



The Division purchased 236 acres and 1.7 miles of East Fork Sevier River frontage in Piute County.



BY LYNN CHAMBERLAIN,  
SOUTHERN REGION CONSERVATION OUTREACH MANAGER

# Riparian

## WETLANDS

### *A limited but important habitat*

IT'S NO SECRET that Utah is a desert state and that its limited water supply is its most valuable resource.

The recent drought has helped focus our attention on the value of this limited resource. Communities have had to cut back on usage to conserve supplies and ensure there will be enough water to fill our needs into the future.

Water is essential for our survival. It cools our engines and homes, cleans our clothing and bodies, helps grow and prepare our food and quenches our thirst. Without an adequate supply, we could not exist.

Water is essential to our mental well being as well. Some of the most beautiful scenes imaginable are those that feature the meeting of land and water. Who can ignore the view of waves crashing on a rocky seashore, or the glow of a serene alpine lake surrounded by trees dressed in the reds and golds of autumn. What is more restful than watching water cascading over rocks, or listening to the playful sound of a stream as it nourishes the plants and animals that live nearby.

Commonly, the area where water and land meet is called a wetland. Several kinds of wetlands exist based on the type of meeting that takes place between land and water. A lake, for example, is usually characterized by deep water that covers a large area. A pond is smaller and usually shallower. A marsh is identified by

the grasses and reeds that emerge from the mud in its shallow depths. A swamp usually has trees and other large plants that grow from its water-covered soils.

One of the most important types of wetlands in Utah is the riparian wetland. This type includes all stream and riverside areas and is the most common type of wetland in the state.

In Utah's mountains, riparian zones are found in the bottom of canyons that have been cut over many years by the hydraulic activity caused by mountain streams and their associated runoff and floods. Some of the wilder, more remote mountain streams tend to be hard to navigate because they're in the bottom of deep ravines and are littered with boulders and overgrown with birch and willow trees.

The same characteristics that make them hard to navigate make them invaluable to wildlife species. Not only do animals rely on the stream for water, but they also are supplied with cover and needed nesting and resting areas away from the intrusion of predators and man. The trees that are found along the streams are vital in slowing erosion and helping clean the water as it rushes down the mountain and makes its way to



The Virgin River forms a corridor of greenery through Zion National Park.

LYNN CHAMBERLAIN



its next destination. Also, a multiple-layered vegetative structure that includes grasses, forbs and shrubs combine to create a diverse and healthy riparian system capable of filtering out non-point source pollution and buffering the effects of surrounding land use practices. As rain falls and snow melts, these mountain riparian wetlands provide a purifying pipeline to channel the water to the valleys where we live.

As the streams leave the mountains, they enter flatter, less contoured lands and often become ribbons of green, amidst vast oceans of sagebrush or red sand-covered deserts. They're lined by large trees, such as cottonwoods and box elders. These tall, leafy, deciduous (a term for plants that lose their leaves in the fall and go dormant in the winter) trees can evaporate as much as 50 gallons of water or

more into the atmosphere a day during the hot summer days Utah is so famous for. Although it may appear this water is lost from the system, in actuality, it's only transferred from one point to another. Eventually, this evaporated water will fall to the ground again as rain or snow and begin its journey down the stream once more.

At this point, these riparian areas become even more essential to livestock and wildlife. They are often the only source of water for many miles. Several species spend their entire lives within a few hundred yards of these vital pathways. Birds such as hawks, woodpeckers and songbirds make nests in the tall trees at the edge of the water. Insects eat the leaves and provide food for other animals that might eat them, such as frogs, toads, and lizards. In turn, snakes, raccoons,

ringtails, and other predators feed on them. Deer and elk also feed on the leaves and then provide sustenance for predators and scavengers. Many of these animals could not survive without the water and the other habitat needs that are supplied by riparian wetlands.

The overall health of these ribbons of life is vital to the people of Utah. Riparian wetlands supply food, water and shelter to more than 70 percent of Utah's wildlife species. They help channel water from the high mountains to reservoirs where it can be used for the good of all Utahns. The plant growth found in these wetlands helps to purify and oxygenate our water supply and prevents erosion.

All in all, it is easy to see why riparian wetlands are among the most important of Utah's valuable natural resources. f



LYNN CHAMBERLAIN

Riparian areas like this, Seven-Mile Creek, are sometimes the only sources of water for many miles.





Bullion Creek is a great example of mountain riparian habitat—it provides wildlife habitat and offers humans a pleasant, visual experience.





If mule deer populations are to rebound, government agencies and conservation groups may have to spend millions of dollars on habitat restoration.



BY RORY REYNOLDS AND JOHN FAIRCHILD,  
DWR HABITAT SECTION

# Rangelands

## OUT OF STEPPE

### *An update on Utah's habitat initiative*

**T**HE TESTS have been run and range management professionals have made their diagnosis. Utah's sagebrush rangelands and pinyon-juniper woodlands are suffering from the ecological equivalents of old age and malnutrition.

State and federal agency administrators who meet regularly as the Utah Partners for Conservation and Development have decided that drastic measures are needed to come up with a "cure," and are seeking \$4 million annually to fund habitat restoration projects on public and private lands.

A conservation partnership is developing among federal and state natural resources agencies, conservation organizations, private landowners and others that is unprecedented in Utah's history. Success will be measured in watershed-related benefits (improved water quality, water quantity, timing, and duration of stream flows), fewer at-risk wildlife populations, economically viable ranching operations, productive big game winter ranges, and other by-products of

healthy rangelands.

#### **What are sagebrush rangelands?**

Rangeland is a kind of land dominated by grasses, grass-like plants, forbs, or shrubs. In Utah, rangeland dominated by sagebrush is found in two vegetation types; Great Basin

sagebrush and sagebrush steppe.

The Great Basin sagebrush type occurs on more than six million acres statewide, and exists as vegetation that is overwhelmingly dominated by sagebrush. The sagebrush steppe type occurs on about 4 million acres in northern and northeastern Utah. It's characterized by a greater mix of sagebrush and herbaceous species (grasses and forbs). When healthy, both types provide habitat for numerous species of plants and animals; food, cover and space for wildlife; forage for livestock; water for irrigation and culinary uses; and open space for a wide range of recreational activities.

#### **What's happening "out on the range?"**

Rangelands in Utah, particularly those dominated by sagebrush and pinyon-juniper woodlands, are at a threshold of critical, and potentially permanent, change. Although the drought and fires of the past 10 years have been devastating, they are only partially to blame for the condition of rangelands today. The blame must be shared with noxious weeds and exotic annual grasses that have crept into the landscape through livestock use and transportation corridors, unsustainable livestock grazing practices, big game



Many of Utah's rangelands are dying a slow death.



populations that have at times exceeded range carrying capacity, fire management, and lack of on-the-ground management.

In many areas, the native perennial grasses and forbs, referred to as the “understory,” have been lost or greatly reduced. In their place, a host

ever since.

When cheatgrass dominates the understory of a plant community, it inhibits the establishment of native perennial grasses and shrubs. It germinates in the fall and winter, sending its roots down to monopolize available moisture and nutrients before native

plants, and stay greener for a longer period. When these plant communities burn, fewer acres are involved, and the post-burn landscape is generally a mosaic of burned and unburned areas.

Because of the cheatgrass invasion, fire frequency has been reduced, from 40 to 100 years in native shrub ranges, to 10 years or less in cheatgrass dominated ranges (three- to four-year cycles are common in cheatgrass-infested areas). This increased fire frequency has eliminated most shrubs and native bunchgrasses. What this means is that native plant communities in a cheatgrass/fire dominated regime have virtually no potential to be restored to their native condition without active restoration intervention. With at least one-third of Utah's lower elevation rangelands already dominated by exotic annual grasses and noxious weeds, the stage is set for an ecological disaster.

#### **Wildlife diversity**

One of the best indicators of healthy rangelands is the presence or

## Utah rangelands are on the threshold of change.

of exotic (non-native) plant species has become established. Russian thistle (tumbleweed) was perhaps the first to become widespread in disturbed areas. Numerous introductions of other plants followed, with cheatgrass becoming the dominant species on vast landscapes.

Cheatgrass is native to Europe and Asia (Eurasia) and came to the Intermountain West in contaminated seed in the 1890s. By 1920, it was well established and has been increasing

grasses break dormancy in the spring. It matures and sets seed 4 to 6 weeks before perennial grasses, but by late June, is ready to burn.

Cheatgrass develops a dense, continuous cover that is highly flammable. When ignited, wildfires spread through cheatgrass-dominated landscapes quickly and completely. In contrast, native plant communities growing on the same sites are more resistant to fire because they are dominated by bunchgrasses, have more open space between





absence of wildlife. Rangelands dominated by native perennial shrubs and grasses attract a variety of wildlife species and provide for many of their life cycle requirements.

Greater Sage-grouse, mule deer and pronghorn antelope provide perfect examples of the effect of degraded rangelands on wildlife. Sage-grouse occupy half the habitat and are less than half as abundant as they were before 1847. Mule deer and pronghorn populations have also declined dramatically over the past two decades.

Less obvious, but just as significant, are declines in populations of Neotropical migratory birds (birds that breed in Utah and migrate to Mexico or Central America in winter), such as the Sage Thrasher, that depend on healthy sagebrush habitat for a portion of their life. Breeding bird surveys have found that cheatgrass-dominated grasslands support less than half the number of bird species that breed in healthy sagebrush habitats. Small mammals such as the pygmy rabbit,

and the sagebrush lizard and a host of reptiles, need sagebrush to survive. Populations of these species have decreased dramatically, a direct result of the decline in quantity and quality of Utah's sagebrush habitat.

### **Watershed conditions**

Healthy watersheds promote the basic functions of water infiltration, percolation, and storage, while helping to reduce major problems such as flooding, the down-cutting of stream channels, and excessive sedimentation. Consequently, watershed condition greatly influences water quality, water quantity, timing, and duration of stream flows.

A properly functioning watershed has enough plant cover provided by perennial shrubs and grasses to protect the soil surface from the erosive forces of water and wind. The plant cover acts like a sponge by trapping, storing and slowly releasing water that surfaces later as seeps, springs and stream flows. As watersheds lose their herbaceous plant cover, and become domi-

nated by exotic annuals such as cheatgrass, they become less effective in performing these important functions. Unfortunately, landowners and public land managers have come to expect excessive soil loss, sediment-laden streams, and an increase in the frequency and severity of flooding in these areas.

### **Livestock grazing**

Healthy rangeland can provide a dependable supply of forage for livestock. It allows ranchers to maintain stocking rates at levels that can be sustained over time and to generate enough revenue to stay in business. However, as range conditions on private and public rangelands deteriorate, producers are having to cut back on the number of livestock that they turn out on the range. The reductions are cutting into profits and seriously impacting livestock operations.

Ranchers throughout Utah depend on healthy rangelands to maintain economically viable livestock operations. One of the greatest chal-



ROBY RENOLDS



lenges facing the Habitat Initiative (to be discussed in a moment) is for state and federal land managers and livestock operators to apply the best available science in developing grazing management programs. This will involve preparing and implementing ecologically sound grazing plans, monitoring changes in plant community composition, and making adjustments when needed to meet management objectives.

What can we do about it?

With the understanding that habitat loss and degradation are threatening Utah's wildlife today more than any other factor, the Utah Partners for Conservation and Development recently launched Utah's Habitat Initiative to aggressively deal with this statewide problem. In partnership with federal and state land managers, the DWR has identified and mapped restoration focus areas in the sagebrush habitat ranges. This has been done using data collected by the Utah Range Trend Study Program, Bureau of Land Management and U.S. Forest Service range assessment reports, wildlife population survey data, water quality data, and on-the-ground range assessments by agency personnel. This mapping effort identifies where active and passive range restoration is needed to prevent further declines in rangeland health.

Active restoration involves physical intervention in the form of invasive species control and revegetation. This type of restoration is expensive, often approaching \$100 per acre, and involves some type of mechanical or chemical treatment, in combination with artificial seeding, to reestablish perennial grasses, forbs, and shrubs. In many areas, passive restoration (making adjustments in current management) is all that is needed to maintain or attain desirable plant communities.

Making management adjustments prior to crossing a critical threshold (such as going from a native grass/shrub plant community to one dominated by exotic annual grasses and noxious weeds) is more economical and timely than carrying out active

restoration treatments.

### What are the risks?

Within the Habitat Initiative focus areas, particularly in eastern and southern Utah, the prolonged drought has exacerbated the situation, resulting in large-scale sagebrush die-offs. These areas are now prime for cheatgrass invasion and will require immediate active restoration to prevent the cheatgrass/fire regime from becoming established and to prevent the loss of sagebrush habitat that's so critical to wildlife.

Active restoration in areas that support isolated populations of species that require dense stands of sagebrush during a portion or all of their annual life cycle (sage-grouse, pygmy rabbits, several bird species and others) will require special planning to ensure that sufficient habitat is available to perpetuate the populations during the recovery period. The long-term habitat objective in these areas is to maintain the potential for a sagebrush-dominated landscape. However, to achieve that objective, active restoration will result

in a short-term reduction in sagebrush density and cover, below that required by some of these sagebrush-dependent species. Biologists will have to be sensitive to the importance of methodology, project size, and the impact of numerous projects over time to provide sufficient habitat to maintain local populations.

Restoration will not return Utah's rangelands to pristine conditions, but there is optimism among all of Utah's Habitat Initiative partners that significant progress will be made in improving rangeland health in focus areas statewide.

Restoration is a beginning; the point where the ecological decline in rangeland health can be halted and good stewardship can take over to avoid any "setbacks." There is a risk that active restoration will result in a short-term reduction in the local populations of some sagebrush-dependent wildlife species. However, the consequences of doing nothing are far more risky, with the fate of these species dictated by the timing and location of the next major wildfire. f



Several hundred thousand acres of sagebrush needs to be rehabilitated.

ROY REMOULDS



## WILDLIFE FOR KIDS

# Habitat! What's that?



**T**O PUT IT SIMPLY, Habitat is the Food, Water, Shelter and Space in an area that a wildlife species needs to survive. A species of wild animal can only live where its habitat needs can be found—where there is suitable food, water, shelter (cover) and space. These basic needs don't only have to be there, but also have to be available in the right amounts, in the right combinations and at the right time—they must be in a Suitable Arrangement. Habitat provides an animal with what it needs for feeding, resting, breeding, raising young and escaping danger. Some people think of habitat as an animal's "home."

Conditions within an environment don't always stay the same all the time though. This can make things more complicated. For example, natural succession, seasonal changes, or events such as a drought, flooding or a cold snap, can influence

an animal's food and water supplies. Other wildlife may also limit an animal's ability to get to a needed resource—predators may stop an animal from reaching a food source too far from cover; competitors may make it hard for an animal to find a good nest site; or disturbance from noise or presence of people may scare it off and keep it from being able to use the resources in an area.

Besides all the possible changes in an environment, an animal itself also changes over time. Its needs can change with the seasons or as it grows and gets older during its life. Migration, hibernation and reproduction are other activities in the life of an animal that can change its habitat needs for survival.

### **Habitat galore— maybe not anymore**

Utah is lucky to have many different environments—forests, wet-

lands, mountains, foothills and deserts. These environments provide habitat for more than 600 species of wildlife (not counting all the insects, spiders and other smaller forms of life).

Unfortunately, loss of habitat has become the biggest threat to wildlife in Utah. Most of this loss of habitat has been caused by things people have done. Much wildlife habitat has been changed into housing developments, businesses and farms, and for production of energy, wood and minerals. Pollution, the spread of exotic species, soil erosion and over-grazing have also caused much damage to wildlife habitat. It is true that some species can live close to humans and deal with activities of people, but most cannot. When habitat is lost or destroyed in an area, most wildlife species can no longer survive there. Two areas in Utah where wildlife habitat is especially threatened are



## UTAH'S WILD NOTEBOOK

sagebrush-steppe and riparian ecosystems.

### Keeping Utah wild!

A lot of people in Utah think the "wild" areas of our state are very important and make living here better. Wild areas with wildlife are not only beautiful places for people to enjoy. They also help do important things for people. For example, they

give us sources of clean water and clean air, things that people could not survive without. To be sure we have good habitat left for wildlife, people need to take better care of the land. Since healthy wildlife habitat is not only good for wildlife but people too, helping to preserve habitat is good for everyone.

People can still make a difference. How you choose to use

resources and treat the land can make a difference too. To help save habitat for wildlife, you can get involved in organizations that work to protect habitat and the environment. Or you can even create or help restore wildlife habitat right around your school, home or in your community.

Remember, wildlife needs habitat! f



Barn owls



Great Basin rattlesnake



Bobcat



Tiger salamander

## Habitat: what wildlife needs

### Exercise

Pictured here are some of Utah's wild animals. Try to match the animal's picture with its description. Then write the animal's name in the white space above its description.

Learn more about these animals on the Internet at the Utah Conservation Data Center: [dwr.cdc.nr.utah.gov/ucdc/](http://dwr.cdc.nr.utah.gov/ucdc/).

And the next time you're in the outdoors, look around and think about which animals could find habitat to live where you are.

- feeds on twigs and branches of trees and woody bushes, and can bite through branches more than an inch thick;
- has a thick winter coat with woolly underfur, and a thin summer coat;
- grows huge antlers each spring that it sheds during winter;
- stands up to 7.5 feet tall when full grown.

- lives part of its life in a pond, then moves to land near water;
- has moist, scaleless skin and four toes on its front feet and five on its back;
- is the only species of salamander living in Utah;
- makes no sounds.

HABITAT IS

wh



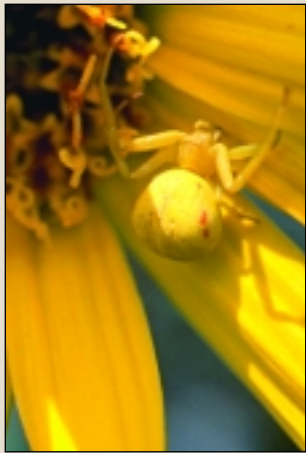


## UTAH'S WILD NOTEBOOK

- eats cottontail rabbits and other small mammals;
- might rest during the day on a rocky ledge or in a hollow log;
- has fur that helps it blend in well with its surroundings;
- has young that are called "kittens."

- hunts over fields and meadows at night in search of mice;
- has large eyes, but can find prey in total darkness using its ears;
- roosts in old buildings, caves or tree hollows during the day;
- spends winter here instead of migrating south."

- lives in rough, rocky and steep desert canyons and washes;
- feeds on grasses and shrubs, and drinks from water holes;
- has hooves that can grip onto rocks as it climbs;
- can spot predators up to five miles away.



Yellow crab spider



Desert bighorn sheep



Beaver



Moose

- does not spin webs, but can change its color to hide as it waits to ambush prey such as bees, flies and other insects;
- has fangs to inject venom into its prey;
- can lay between 50 to 100 eggs;
- has eight eyes;

- lives in ponds created by the dams that it builds;
- has large front teeth to cut down trees and feed on bark;
- slaps its paddle-shaped tail on the water to signal danger;
- stays active during the winter inside its lodge.

- has no eardrums but can feel vibrations with its body;
- can "smell" and sense heat with its forked tongue to find prey such as mice, frogs and lizards;
- hunts at night and rests in a cool burrow during the day;
- swallows its prey whole.





## UTAH'S WILD NOTEBOOK

**FOOD:** Food provides energy and strength animals need to be healthy, stay warm and grow. The types and amount of food an animal needs can depend on its location, age, size, gender, behavior, and from season to season. Animals spend most of their time searching for food.

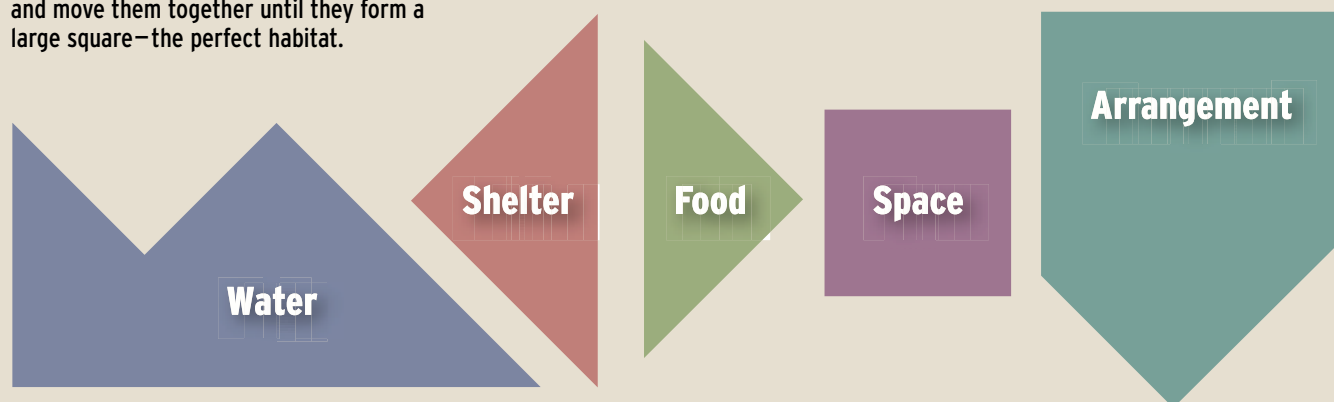
**SHELTER or COVER:** Shelter or cover has many purposes. It serves as a place to: feed, play and loaf, raise and care for young, be protected from bad weather, rest and sleep, and escape from predators. Shelter can be many things—a thicket, a pile of rocks, an underground burrow, dense trees, tall grasses and even water.

**SPACE:** All wildlife species need specific amounts of space. The area an animal normally travels to get its needs is called its home range. Within a species, home range size can vary depending on factors that influence the quality of habitat in an area. Almost all animals also show some type of territorial behavior where they defend a particular area against intruders.

**WATER:** Water is a crucial requirement. The bodies of most animals consist of 60-80 percent water. Water helps to regulate body temperature, carry nutrients, eliminate waste and maintain shape. Sources of fresh water include lakes, rivers, springs, seeps, snow, dew and puddles from rain.

### Habitat puzzle

Each of these five shapes represents one part of a perfect wildlife habitat for wildlife. A perfect habitat has food, water shelter and space in the proper arrangement. First, cut out the shapes. Then turn and move them together until they form a large square—the perfect habitat.



### WILD about reading books

Once there was a Tree, by Natalie Romanova, Dial Books for Young Readers, 1989.

Lizard's Song, by George Shannon, William Morrow & Company Inc., 1992.

The Salamander Room, by Anne Mazer, Alfred A. Knopf Books for Young Readers, 1991.

Animal Houses, by Aileen Fisher, Bowmar, 1973. And So They Build, by Bert Kitchen, Candlewick Press, 1993.

Fitting In: Animals in their Habitats, by Gilda Berger and Melvin Berger, Coward-McCann-Putnam, 1976.

The Old Boot by Chris Baines, Interlink Publishing Group, Inc., 1990.

The Great Kapok Tree: A Tale of the Amazon Rain Forest, by Lynne Cherry, Harcourt Brace & Company, 1990.

Crinkeroot's Guide to Knowing Animal Habitats, by Jim Arnosky, Simon & Schuster Children's Books, 1997.

The Empty Lot, by Dale Fife, Sierra Club Books for Children, 1996.

Where Once There Was a Wood, by Denise Fleming, Henry Holt & Company, Inc., 1996.

### Getting WILD!

Utah's WILD Notebook is produced by Utah's Project WILD program. (Note, this publication is now replacing Project WILD's Growing WILD / Nature's Call publication.) WILD workshops, offered by the Utah Division of Wildlife Resources, provide teachers and other educators with opportunities for professional development and a wealth of wildlife education activities and materials for helping students learn about wildlife and its conservation. For a current listing of Project WILD educator workshops, visit the Project WILD Web site at [wildlife.utah.gov/projectwild/](http://wildlife.utah.gov/projectwild/) or send e-mail to [DianaVos@utah.gov](mailto:DianaVos@utah.gov).

### It's WILD!

Project WILD activities for teachers and students that correlate to this topic include:

- Habitat Lap Sit
- Classroom Carrying Capacity
- Everybody Needs a Home
- Shrinking Habitat
- Habitat Rummy
- Dragonfly Pond
- What's That, Habitat?
- Improving Wildlife Habitat Habit in the Com-

munity

### WILD educator resources and happenings

(Available for Project WILD-trained educators only.)

- Habitat Earth: Wildlife—Video and educator activity guide for check-out. Conveys how FOOD, WATER, SHELTER and SPACE are the essential components of habitat, and that each species has specific habitat requirements. 26 minutes Grades 3-7.
- Project WILD Schoolyard NatureScaping Grants—Receive \$500 for students to conduct an action project to establish wildlife habitat on or near their school grounds. Application and details online at Project WILD Web site.
- WILD About ELK—Advanced Project WILD Educator Training, June 18-19, 2004. Details and registration form are on the Project WILD Web site.







BY RON STEWART,  
NORTHEASTERN REGION CONSERVATION OUTREACH MANAGER

DEDICATED HUNTER & OTHER

# Volunteers

*Sagebrush, pinyon pine and juniper*

**O**F THE NUMEROUS issues facing Utah's wildlife, perhaps the most frustrating is drought.

In the Uinta Basin, its effects have been widespread. Plants need water, animals need water and plants, and there hasn't been any rain or snow. Without water, lakes and streams dry up. The size and quality of terrestrial wildlife habitat starts to decline and, in some cases, no longer exists. Almost all habitats have suffered, especially the drier winter ranges. And the wildlife that relies on these ranges is declining too.

The frustrating thing is, there isn't much a wildlife manager can do about it.

The spring of 2003 brought shockingly bad news, something no one remembered seeing before — dead sagebrush.

Wildlife biologists have been concerned for many years about the condition of sagebrush on many of the ranges in the Uinta Basin. Several projects were underway and others had been proposed to enhance the

sage, especially on the winter and higher elevation transition ranges.

In 2003, wildlife biologists started seeing massive die-offs of sagebrush on their spring surveys. In the Uinta Basin alone, they eventually documented roughly 200,000 acres of sagebrush that was dead, dying or severely stressed.

One of the projects proposed

before the die-offs occurred was the thinning of pinyon and juniper trees in areas where old chainings had been done years before. The chainings were originally done to provide open areas for sagebrush, forbs and other forage species to grow. These open areas are now being encroached upon by pinyon and juniper.

One of the adaptive strategies these trees evolved with is to inhibit the growth of other plants. They do this by competing for water. They also produce compounds that ooze from their leaves and inhibit the growth of plant species that surround them. This gives them an obvious competitive advantage to obtain water, nutrients and other sparse resources needed to grow. As these trees invade, the availability of sagebrush, forbs, grasses, and other forage declines and may eventually be eliminated. Within another 30 to 50 years, this valuable deer winter range will become a mature pinyon/juniper forest, which will contain little or no understory vegetation. In short: little forage equals fewer mule deer, elk and other wildlife.

A project, or really a series of projects, was proposed to go back to these old chainings and open them back up. Reworking these areas



RON STEWART

Roughly 200,000 acres of sage is dead or dying in the Uinta Basin alone.





RON STEWART

**Volunteers have cut down between 100 and 150 acres of pinyon and juniper at Rabbit Gulch WMA.**

would restore their forage values. In discussion, however, it was quickly pointed out that while encroachment was a major problem, most of these areas were still 50 to 70 percent productive. Were these areas the highest priority?

**E**nter hunters from the Dedicated Hunter program. To protect the forage on these winter ranges, land managers have a few options: burning, chemical treatment, chaining, and physical (tree by tree) removal.

Prescribed burns and chemicals kill trees but also kill shrubs, so forage values are lost. Chaining protects more shrubs but because younger trees are flexible and can bend under the chain, not as many trees are removed compared to tree-by-tree removal. Also, these three treatments can be politically sensitive and they're expensive. With tight budgets, physical removal seems to be the best option currently available.

In exchange for additional hunt-

ing privileges, the Dedicated Hunter program provides the Division of Wildlife Resources with a tremendous volunteer labor source. It looked like a perfect fit—the DWR needs the trees removed and dedicated hunters need a solid project to work on. The DWR's Northeastern Region soon made the decision to initiate pinyon/juniper removal projects using dedicated hunters.

The proposed projects were well received but were soon tied up in red tape. Most of the projects were on federal lands. Before they could happen environmental assessment updates, with archeological and other clearances, were needed. So, while other projects were being looked at, the DWR turned to its own lands and focused attention on its Rabbit Gulch Wildlife Management Area.

With the DWR's own assessments done, the Rabbit Gulch project was born in the spring of 2003. It was designed to be a self-serve project. Information was posted on the DWR's Internet Web site and through the

DWR's Northeastern Region office. Participants were asked to take before-and-after photos and record the number of participants, mileage and hours worked. This information was then sent to the DWR's Northeastern Region office by mail or e-mail.

The project has actually worked out better than expected. About 60 dedicated hunters and another 20 or so friends, family members and members of the Mule Deer Foundation have contributed to the effort. It's estimated that 100 to 150 acres of encroaching pinyon and juniper have been cut down.

The volunteers have cut trees of all sizes, some well over 20 feet high to some that were only two inches tall. All tree branches and greenery need to be removed, as any branch missed will continue to grow and will eventually become a new trunk.

Tree by tree, the volunteers are pushing back the forest and reclaiming the winter range for the deer and elk they like to hunt. f

## Dedicated Hunter program changes

When the calendar changes to 2004 the Dedicated Hunter program will change a little too. The core of the program—three-year enrollment, guaranteed buck deer permit in the region of the hunter's choice, three-season hunt opportunity (archery, any weapon and muzzleloader)—will remain. However, all of the 24 hours of conservation project work the program requires must be completed before a participant will be issued their second deer permit. Those who don't want to remain in the program can surrender their Certificate of Registration (COR), which will allow them to obtain other types of deer permits in 2004.

Also, beginning in 2005 hunters entering or reentering the Dedicated Hunter program, must obtain the COR in the big game drawing, so applicants will need to apply for it in January 2005.

Obtain a copy of Utah's 2004 Big Game Proclamation (available in late December) to learn more about the new Dedicated Hunter program or visit the Dedicated Hunter Web site ([wildlife.utah.gov/dh](http://wildlife.utah.gov/dh)).

### TELEPHONE NUMBERS

Information hotline: 1 (801) 596-8660  
Toll-free info. hotline: 1 (877) 592-5169  
National fishing hotline: 1 (800) 275-3474  
Utah bird line: 1 (801) 538-4730  
Cougar harvest objective hotline: 1 (888) 668-5466  
Poaching hotline: 1 (800) 662-DEER  
Web site address: [www.wildlife.utah.gov](http://www.wildlife.utah.gov)



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